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ABSTRACT

Distance education is described as instructional delivery that takes place when learners and teachers are separated throughout the learning process by time and physical distance. Research indicates that distance education can provide students with opportunities for learning through alternatives to regular class meetings. Furthermore, research reveals that for some students distance education allows access to education for those who are unable to attend an educational establishment. The purpose of this paper is to provide an overall view of distance education in the United States. The paper begins with a description of distance education, distance education students, and its effectiveness. It then focuses on distance education and technology. Advantages, disadvantages and problems in distance education are discussed. (Contains 29 references.) (Author/AEF)

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An Overall View of Distance Education in the United States

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Abstract

Distance education is described as instructional delivery that takes place when learners and teachers are separated throughout the learning process by time and physical distance. Research indicates that distance education can provide students with opportunities for learning through alternatives to regular class meetings. Furthermore, research reveals that for some students distance education allows access to education for those who are unable to attend an educational establishment. The purpose of this paper is to provide an overall view of distance education in the United States. The paper begins with a description of distance education, distance education students, and its effectiveness. The paper then presents distance education and technology. Next, advantages and disadvantages of distance education are explained. Following this, the problems in distance education are discussed. Anyone interested in the design, delivery, or evaluation of distance education, particularly teachers and educational administrators, will find this paper useful for learning about this increasingly popular educational approach for the 21st century.

An Overall View of Distance Education in The United States

Introduction

Distance education is not a novel educational process. It has been available in the form of correspondence courses for more than 200 years (Findley & Findley, 1997). With the introduction of technology, the method of distance education has changed. Historically, the term distance education was used in other countries while, within the United States. it was called correspondence study (Froke, 1994). Distance education termed as correspondence work, began when Isaac Pittman first offered correspondence courses in shorthand in England in 1840. Correspondence education began in the United States in 1874 at Illinois Wesleyan University (Grimes, 1993). In 1892, the University of Wisconsin used the term correspondence course in its catalogue. This is why the year 1892 is now considered to be the birth date of distance education in the United States (University of Michigan, 1995).

William Rainey Harper, the first president of the University of Chicago, was the founder of correspondence education in the United States. The first known use of correspondence education took place in 1906 and dealt with the areas of elementary and secondary education. This was done at the Calvert School in Baltimore, Maryland (Grimes, 1993). Distance education using technology first occurred with the use of radio at the University of Wisconsin's pioneering radio station WHA in the 1920s (Gooch, 1998; Penn State, 1997). Shortly thereafter, public broadcasting and cable television were used for distance education. Hence, in the 1940s and 1950s, teachers began to use television broadcasts and tapes to enhance their distance instruction (Ham, 1995).

Early implementation of distance education focused on higher education, specifically in the fields of business, engineering, and technology. Professional associations were able to offer regional and national educational services to their members through the use of university faculty from the different academic areas. Eventually though, distance learning technologies spread to elementary and secondary schools, mostly in the rural areas of the country. This was due to the fact that specialized coursework in languages, mathematics, and sciences were not always available in the rural areas, due to a lack of funding and/or teachers (Froke, 1994).

During the 1960s and 1970s, audio teleconferencing and cable television became part of distance education instructional strategies. In the 1980s and 1990s, many distance education programs began to integrate new technologies, such as satellite, audio, video, computer technologies, e-mail, and the World Wide Web. Furthermore, the 1990s also have introduced desktop video-conferencing and multimedia to the user's desktop (Ham, 1995; Steiner, 1997).

At the present time, the most applied delivery methods are done through audio, video, and computer technologies. Technology-assisted distance education has recently become more familiar due to the expansion of distance education. Traditional technologies such as mail, telephone, and fax have evolved to VCR-based technology and Internet (Zhang, 1998). Technology has enhanced distance education and consequently has led to several perspectives vis a vis its meaning.

What is Distance Education?

Various definition of distance education have been offered, but Perry and Rumble (1987), and later Keegan (1990), perhaps present the most comprehensive ones. They defined it according to five main criteria: (a) the quasi-permanent separation of teacher and learner; (b) the

central involvement of an educational organization in the planning, development and delivery of instruction and instructional materials; (c) the use of various technical media, including print-based materials, videotapes, audiotapes, videoconferencing, audioconferencing, computer software, the World Wide Web, radio, and television; (d) the provision for regular two-way communication; and (e) the opportunity for occasional face-to-face sessions. Grimes (1993) similarly defined distance education as, "any formal approach to learning in which the majority of the instruction occurs while the educator and learner are at a distance from each other" (p. 7).

Perry and Rumble (1987) further pointed out that since distance education depends on two-way communication, it is not just teaching people who are at a distance (as in traditional correspondence study), nor is it just learning from the work of someone who is not present (as in self-study). Distance education requires both distance teaching and distance learning.

In distance education, neither teachers nor students are physically present to clarify, discuss, or provide feedback – there is no face-to-face contact. Yet, distance education continues to be popular because it provides access to education for those who are unable to attend an educational establishment regularly (Carter, 1998; Fox, 1996; Froke, 1994; Grimes, 1993; Ham, 1995; Hertenstein, 1999; Willis, 1993; Zhang, 1998).

Both Feasley (1992) and Roblyer, Edwards, and Havriluk (1997) defined distance education using a variety of terms including distance learning, distance teaching, open learning, and remote learning, which according to them, all refer to learning situations that are alternatives to regular class meetings. According to Froke (1994), the term distance education suggests the use of all media and learning resources by teachers and academic professionals in formal and informal education. According to Kwielford and Goodfriend (1999), "distance learning is both a

location and a concept that allows teachers and students to communicate despite a separation of time and space" (p. 16).

According to Hertenstein (1999), there are several reasons for students to prefer television-based instruction over traditional instruction. These reasons include: (a) long distance commute from campus; (b) time constraints; and (c) work and family responsibilities. Distance education takes place at the same time and place. Distance education provides a means with the use of technology to reach students in remote sites who cannot participate in on-campus courses.

Distance Education Students

The average distance education students are middle age (over 35 years of age), non-traditional, have a career and a family. Two-thirds are usually female, more than half are married, fifteen percent have been out of school for more than six years, three-quarters are working full-time or part-time, three-quarters are working towards a degree, and fourteen percent are ethnic minority (Cyrs & Smith, 1990). Distance education students are highly motivated and are goal-oriented. Middle aged distance education students are mostly willing and eager women, who cannot travel, and are going back to school for a career or advanced degree. On the contrary, middle aged distance education men have a more relaxed attitude. The average distance education students are non-traditional. The implications are that distance education is going to continue to have mostly female students. Since most are married and work, evening classes will be desirable. Most of the courses will be in the area of teachers/career related. There will be more qualified teachers with a degree and a more knowledgeable work force (Foley, 1998; Levy, 1998; Parrott, 1999).

As time passes, distance education is becoming a more desired alternative education. It is becoming more popular with students who are not able to commute to college, those who are employed, those who have a family, and those who take cost into consideration. It is estimated that about half to three-quarters of the institutions which offer or contemplate offering distance education courses plan to start their distance education course programs to other types of remote sites, to other branches of their institutions or to other college campuses, to work sites, to libraries, to elementary/secondary schools or community-based organizations. It is also estimated that 50% plan to start a home-base program (Greene, 1997). As a result of these trends, distance education seems to be a positive alternative to the traditional class environment. Thus, as distance learning programs increase in number and grow in delivery techniques, an examination of the effectiveness of distance education is required to select and deploy these current technologies.

Effectiveness of Distance Education

Whether instruction is delivered in the classroom or at a distance, both methods of can be effective. Simonson (1997) stated that research demonstrates that distance instruction is as effective as traditional instruction. He asserted that, in general, both distance learners and traditional classroom learners reach the same achievement level. Foley (1998) supported Simonson's view stating, "research shows that distance education can be as effective as face-to-face instruction. Methods and technologies need to be appropriate to the instructional tasks. Learners need to be at the center of the process. . . . Timely feedback is important to success" (p. 973). A study by Eastern Iowa Community College District on the effectiveness of two-way interactive distance delivery of instruction supported Simonson's view that there is no significant

difference between the academic performance of students on campus versus students off campus. But the study also indicated that off-campus students had a lower level of satisfaction with "the organization of the class, the adequacy of visual aids, the instructor's awareness of remote site students, the timely return of assignments, the learning environment, the adequacy of the interaction, and the perception of how much was learned" (Friedel, 1990, p. 1). According to Middleton (1997), however, distance education is only 80% as effective as classroom-based instruction but he also recognized that the evaluation of distance education is not, as yet, based on any set standards. According to Middleton, the effectiveness of distance education "depends upon which criteria are used to evaluate it and who is doing the evaluation" (p. 133). A problem mentioned by Middleton is that often the participating learners have an inadequate level of preparedness. However, many other problems could also be involved including technical difficulties, poor course organization, poor and uncorrelated handouts, poor presentation skills, and variation in quality of teaching.

Distance Education and Technology

Distance education is instructional delivery which takes place when learners and teachers are separated throughout the learning process by time and physical distance. Technology (i.e., data communication, voice communication, interactive video, or print materials) is used to bridge the instructional gap. According to Boling (1996), the technology that is most commonly applied in the United States today is interactive video (i.e., compressed video with audio). Yocom and Whitson (1995) defined compressed video as "an interactive technology that enables live, two-way audio and video signals to be transmitted simultaneously among sites with specialized equipment" (p. 266). They stated that compressed video signals can be sent by satellite,

microwave transmission, or by telephone lines. Barker (1990) supported these views, stating that the most common media used in distance education programs are satellite, fiber optics, microwave, slow-scan television, and computer networking.

Middleton (1997) indicated that the demand for distance education is increasing. But, according to him, since the public's access to emerging technologies has not kept pace with their development, the impact of new technologies on distance education is negligible. Nevertheless, Omoregie (1997) pointed out that new technologies such as the multimedia computer, television, VCR, laser disc player, graphic camera, and color quickcam, as well as new software such as PowerPoint, Harvard Graphics, HyperCard, and HyperStudio, have all had positive effects on teaching and learning in distance education. These new technologies do increase the effectiveness of distance education, both in terms of the quality of instruction, as well as the flexibility of instruction – i.e., the how, where, and when of instruction (Middleton, 1997).

Advantages and Disadvantages of Distance Education

In a modern distance education instruction format, the teacher can see the students and their reactions and whether the students are understanding what they have been taught. Also, the students can see the teacher. Students are able to see other students and interact with them verbally. Another advantage is that it is less expensive for students in terms of tuition and travel costs. However, there exist a few disadvantages such as limitation on discussion time. A distinct disadvantage is that the management of two-way audio and video instruction is expensive for the school involved. Another major disadvantage is that the network has been known to break down which result in lost lessons for all sites and the cancellation of classes (Roblyer, Edwards, & Havriluk, 1997). Sometimes the quality of audio and video may be unclear to the viewers. The

audio and video equipment are complicated in that it may cause delay in one's class time. Other disadvantages can be a limit in the size of the classes and number of students. Due to obvious constraints, the teacher may not be as well prepared and may create poor material as opposed to a regular class setting.

Problems in Distance Education

Many schools in the United States have begun using distance education technologies to help in reaching state-mandated curriculum requirements, to offer required courses for which a certified teacher is not available or to provide teacher in-service training (Barker, 1990).

Interested administrators and educators seeking information and improvement about distance education programs should address the following logistical questions:

- What are the costs of equipping a distance education classroom?
- Are instructors trained to use the equipment?
- Are instructors prepared to compensate for loss of instruction time due to illness, severe weather conditions, and malfunction of the computer systems?
- Do instructors provide adequate access to assigned materials to students at remote sites?

If administrators and educators opt to use distance education then other problems such as time and place constraints for the students, scheduling complexity, discipline, extra cost and training for different institutions should be addressed. Some other problems that exist when implementing distance education are the following: language barrier, lack of socialization, different learning style, maintaining quality of content, program evaluation and research, and administrative support (Levy, 1998).

Scheduling is a challenging part of distance education. There has to be a well organized coordination between all sites. Advance knowledge of the use of the network system is required. All sites have to be compatible and be able to connect with each other. A decision needs to be made whether or not to teach the course and what facilities are available. Each principal or facilitator has to be contacted to work out an agreeable schedule with all sites.

Discipline is an encompassing concept because if it is not achieved, the whole class suffers from the lack of discipline attained. Some students may suffer frustration and anger. First, misbehavers such as being late, missing class, inappropriate discussion, or class disruption need to be identified prior to any corrective action. Behavior can be made grade dependent. That is to say if they behave, they could get a better grade. Behavior regarding attendance, if appropriate, can be rewarded, or if inappropriate, can be punished. For example, if the student is late more than twice then he or she loses 5 points of the final grade.

The instructor should be trained and familiar with the equipment used, specifically in distance education so that he or she can be competent and can teach with confidence. The instructor should design a course outline well in advance with a list of all terminology to be used and distributed to the students at the beginning of the semester.

Sometimes it is difficult to communicate with the instructor or the facilitator. Therefore, it may be helpful to utilize e-mail, fax or engaging in tele-conferencing. In order to increase socialization, students and the instructor should meet two or three times during the semester.

When language barriers exist, it is especially necessary for the instructor to enunciate the words and speak clearly and loudly. Those who speak different languages may have different learning styles. The instructor should accommodate as many learning styles as possible.

Assigned materials could be e-mailed or mailed to the students at remote sites. If there is a library available to the students at the remote sites, the instructor should work with the library to ensure students' access to the materials.

Also, instructors should be aware of the discrepancies which exist between perceptions of students at remote sites versus those at the primary site. Instructors are encouraged to address these issues by increasing participation of remote site students, increasing instructor travel to remote sites, providing greater interactive opportunities in class, improving turnaround time on assignments, i.e., never distribute materials at the origination site if they are not available at the remote site, and increasing the use of effective visual aids (Friedel, 1990).

Conclusion

Distance education continues to be a promising method of instruction and holds great hope for the future, particularly for rural America. Providing instruction by distance provides numerous opportunities that would not otherwise be possible for students who live in remote, rural locations. Also, students can stay where they are and are not forced to relocate to inconvenient, unfamiliar, far away centers of knowledge. This advantage, which highlights how distance education can be used to help maintain and strengthen existing rural communities, provide a justification, in and of itself, for the use of distance education in whatever form is most appropriate.

Via distance education, people can have a better chance of succeeding, both in their studies and in life. As our world becomes increasingly technology-based, distance education can help individuals in rural areas keep abreast of new and existing technologies. With distance technology-assisted methods, students can both improve their knowledge and skills in their

chosen subjects areas, as well as improve their knowledge and skills in using the technologies that are becoming increasingly common in the workplace.

Finally, while distance education an instructional delivery can add significant value to our educational system, it also requires a willingness to rethink the traditional classroom setting. The future of distance education is not about moving from teacher to technology as a dispenser of information. It is about a collaboration between the two that overcomes the restrictions of time and space, thereby enabling students to learn more, in less time, and with far less overhead (Kinnaman, 1995).

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